an active region overlying the spacer layer, the active region comprising;

a quantum well layer; and

a barrier layer comprising indium;

a cap layer overlying the active region;

an upper confinement layer overlying and adjacent to the cap layer, the upper confinement layer comprising $In_xGa_{1-x}N$, wherein $0 \leq x \leq 0.15$; and

a second conductivity type layer overlying the cap layer;

wherein the spacer layer and the cap layer each have a larger band gap than the quantum well layer and wherein one of the spacer layer and the cap layer comprises indium.

2. (Amended) A light emitting device comprising:

a substrate;

a first conductivity type layer overlying the substrate;

a lower confinement layer overlying the first conductivity type layer, the lower confinement layer comprising $In_xGa_{1-x}N$, wherein $0 \leq x \leq 0.15$;

a spacer layer overlying the first conductivity type layer;

an active region overlying the spacer layer, the active region comprising;

a quantum well layer; and

an InGaN barrier layer with an indium composition between about 1% and about 15%;

a cap layer overlying the active region;

an upper confinement layer overlying the cap layer, the upper confinement layer comprising $In_xGa_{1-x}N$, wherein $0 \leq x \leq 0.15$; and

a second conductivity type layer overlying the cap layer;

wherein the spacer layer and the cap layer each have a larger band gap than the quantum well layer and wherein one of the spacer layer and the cap layer comprises indium.

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2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481

3. (Amended) The light emitting device of Claim 2 wherein the barrier layer is InGaN having an indium composition between about 1% and about 5%.

4. (Amended) The light emitting device of Claim 2 wherein the barrier layer is doped with a dopant of first conductivity type to a concentration between about 10^{15} cm^{-3} and about 10^{19} cm^{-3}.

5. (Amended) The light emitting device of Claim 2 wherein:

the barrier layer has a thickness between about 20 angstroms and about 250 angstroms;

the quantum well layer has an indium composition between about 4% and about 25%; and

the quantum well layer has a thickness between about 10 angstroms and about 60 angstroms.

6. The light emitting device of Claim 1 wherein the barrier layer, the spacer layer, and the cap layer each have an indium composition less than an indium composition of the quantum well layer.

7. The light emitting device of Claim 1 wherein the lower confinement layer comprises $In_xGa_{1-x}N$, wherein $0 \leq x \leq 0.02$.

8. The light emitting device of Claim 1 wherein the lower confinement layer is doped with a dopant of first conductivity type to a concentration between about 10^{15} cm^{-3} and about 10^{22} cm^{-3}.

9. The light emitting device of Claim 1 wherein the lower confinement layer has a thickness between about 50 and about 20,000 angstroms.

10. The light emitting device of Claim 1 wherein:

the lower confinement layer has a first indium composition;

the spacer layer has a second indium composition;

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(408) 382-0480
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the quantum well layer has a third indium composition;

the third indium composition is greater than the second indium composition; and

the second indium composition is greater than or equal to the first indium composition.

11. The light emitting device of Claim 1 wherein the upper confinement layer comprises $In_xGa_{1-x}N$, wherein $0 \leq x \leq 0.02$.

12. The light emitting device of Claim 1 wherein the upper confinement layer is doped with a dopant of second conductivity type to a concentration between about 10^{15} cm^{-3} and about 10^{22} cm^{-3}.

13. The light emitting device of Claim 12 wherein the dopant comprises Mg.

14. The light emitting device of Claim 1 wherein the upper confinement layer has a thickness between about 50 and about 20,000 angstroms.

15. (Amended) The light emitting device of Claim 1 wherein:

the upper confinement layer has a first indium composition;

the cap layer has a second indium composition;

the quantum well layer has a third indium composition;

the third indium composition is greater than the second indium composition; and

the second indium composition is greater than or equal to the first indium composition.

16. The light emitting device of Claim 1 wherein the cap layer comprises $In_xGa_{1-x}N$, wherein $0 \leq x \leq 0.15$.

17. The light emitting device of Claim 1 wherein the spacer layer comprises $In_xGa_{1-x}N$, wherein $0 \leq x \leq 0.15$.

18. The light emitting device of Claim 1 wherein:

the lower confinement layer is GaN;

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FAX (408) 382-0481

the spacer layer is GaN;

the barrier layer is $In_{0.03}Ga_{0.97}N$;

the quantum well layer is $In_{0.15}Ga_{0.85}N$;

the cap layer is $In_{0.03}Ga_{0.97}N$; and

the upper confinement layer is GaN.

19. The light emitting device of Claim 1 wherein at least one of the cap layer, the upper confinement layer, the lower confinement layer, and the spacer layer comprises a graded composition of indium.

20. The light emitting device of Claim 1 wherein the cap layer is doped with a dopant of second conductivity type to a concentration between about 10^{15} cm^{-3} and about 10^{21} cm^{-3}.

21. The light emitting device of Claim 1 wherein the spacer layer is doped with a dopant of first conductivity type to a concentration between about 10^{15} cm^{-3} and about 10^{21} cm^{-3}.

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GROUP LLP
2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481